

Work Order ID 100704

April 30, 2013 9:11:05 AM

100704

Page 1

Item ID: D3428-1

Accept

N9000040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Placard

Start Date: 4/30/13

Start Qty: 40.00

40

Cust Item ID:

Required Date: 5/03/13

Req'd Qty: 40.00

40

Customer:

Reference:

Approvals:

Process Plan: *CL*

Date: *13/04/30*

Tooling:

Date:

Run Start

NR1

OC: -

Date:

SPC (Y/N):

Date:

Stop

NR2

| Draw Nbr | Revision Nbr | Set Up Run Hours | Plan Code | Accept Qty | Reject Qty | Reject Number | Resp. Stamp |
|----------|--------------|---------------------|--------------|---------------|---------------|------------------|----------------|
|----------|--------------|---------------------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D3428

Rev A

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: *19731*

Manufacture as per Dwg D3428 using 3M 7mil masking film #8522CP or Avery

IPM #2031

Possible Supplier: Studio Lettrage

Material release note is required

CL 13/04/30 40

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.00

Packaging

Ensure material release note is attached

13/04/13 40

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|--|------|------|-----|---|-------------------|---|-------------|--------------|--------------|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | |

| FAULT CATEGORY | | | | | | | | | |
|--|---|---|--------------------------------------|--|--|---|---|--|--|
| Landing Gear | | General | | Grain | | Other | | | |
| <input type="checkbox"/> Bending | <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> Bend | <input type="checkbox"/> BOM/Route | <input type="checkbox"/> Grain | <input type="checkbox"/> Hardware | <input type="checkbox"/> Ovalized | <input type="checkbox"/> Pressure/Forced | | |
| <input type="checkbox"/> Cracks | <input type="checkbox"/> Crushed/Crimped | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Burrs | <input type="checkbox"/> Inspection Incomplete | <input type="checkbox"/> Instructions Incomplete/Unclear | <input type="checkbox"/> Over/Under tolerance | <input type="checkbox"/> Temperature/Cure | | |
| <input type="checkbox"/> Cuffs | <input type="checkbox"/> Heat Treat | <input type="checkbox"/> Contamination | <input type="checkbox"/> Countersink | <input type="checkbox"/> Maintenance | <input type="checkbox"/> Mislabeled | <input type="checkbox"/> Part Incorrect | <input type="checkbox"/> Weld | | |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Ripples in Bend | <input type="checkbox"/> Cut Too Short | <input type="checkbox"/> Drill Holes | <input type="checkbox"/> Offset | <input type="checkbox"/> Out of Calibration | <input type="checkbox"/> Part Lost/Missing | <input type="checkbox"/> Wrong Stock Pulled | | |
| <input type="checkbox"/> Torque Waves in Extrusion | <input type="checkbox"/> Turning Sequence | <input type="checkbox"/> Drawing | <input type="checkbox"/> Finish | <input type="checkbox"/> Misread | <input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Positioned Wrong | | | |
| <input type="checkbox"/> Wave/Twist in Tube | <input type="checkbox"/> Folio | <input type="checkbox"/> Outside Dimensions | | <input type="checkbox"/> Power Loss/Surge | <input type="checkbox"/> Other | | | | |

Work Order ID 100704

April 30, 2013 9:11:05 AM

100704

Page 2

Item ID: D3428-1

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Placard

Start Date: 4/30/13 Start Qty: 40.00

40

Cust Item ID:

Required Date: 5/03/13 Req'd Qty: 40.00

40

Customer:

Reference:

Run Start ***NR1***

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop ***NR2***

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

130

Identify as per dwg & Stock Location: STAYS 0.00

130

Packaging

Memo

0.00

Packaging

140

QC21- Final Inspection - Work Order Release 0.00

140

QC

Memo

0.00

Quality Control

*DAG
27
B.S.S*

*40
can*

40x

*SO
13-5-7*

13/5/8

13-05-7

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|--|-------------|-------------|------------|---|--------------------------|---|------------------------|---------------------|---------------------|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | |

| FAULT CATEGORY | | | | | | | | | | |
|-----------------------------------|---|--|--|--|---|---|--|--|---|---|
| Landing Gear | | | General | | | | | | | |
| <input type="checkbox"/> Bending | <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> Cracks | <input type="checkbox"/> Crushed/Crimped | <input type="checkbox"/> Cuffs | <input type="checkbox"/> Heat Treat | <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Ripples in Bend | <input type="checkbox"/> Torque Waves in Extrusion | <input type="checkbox"/> Turning Sequence | <input type="checkbox"/> Wave/Twist in Tube |
| <input type="checkbox"/> Bend | <input type="checkbox"/> BOM/Route | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Burrs | <input type="checkbox"/> Contamination | <input type="checkbox"/> Countersink | <input type="checkbox"/> Cut Too Short | <input type="checkbox"/> Drill Holes | <input type="checkbox"/> Drawing | <input type="checkbox"/> Finish | <input type="checkbox"/> Folio |
| <input type="checkbox"/> Grain | <input type="checkbox"/> Hardware | <input type="checkbox"/> Inspection Incomplete | <input type="checkbox"/> Instructions Incomplete/Unclear | <input type="checkbox"/> Maintenance | <input type="checkbox"/> Mislabeled | <input type="checkbox"/> Misread | <input type="checkbox"/> Offset | <input type="checkbox"/> Out of Calibration | <input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions |
| <input type="checkbox"/> Ovalized | <input type="checkbox"/> Over/Under tolerance | <input type="checkbox"/> Part Incorrect | <input type="checkbox"/> Part Lost/Missing | <input type="checkbox"/> Part Moved | <input type="checkbox"/> Positioned Wrong | <input type="checkbox"/> Power Loss/Surge | <input type="checkbox"/> Pressure/Forced | <input type="checkbox"/> Temperature/Cure | <input type="checkbox"/> Weld | <input type="checkbox"/> Wrong Stock Pulled |
| <input type="checkbox"/> Other | | | | | | | | | | |

Picklist Print

April 30, 2013 9:11:05 AM

Page 1

Work Order ID: 100704

Parent Item: D3428-1

Parent Item Name: Placard

Start Date: 4/30/13

Required Date: 5/03/13

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP: A05.08.10New issueKJ/JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D3428-1P Placard | | Purchased | No | | | 110 | Each | 0.0000 | 1 | 40 | | | |

4/30/13 (40)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

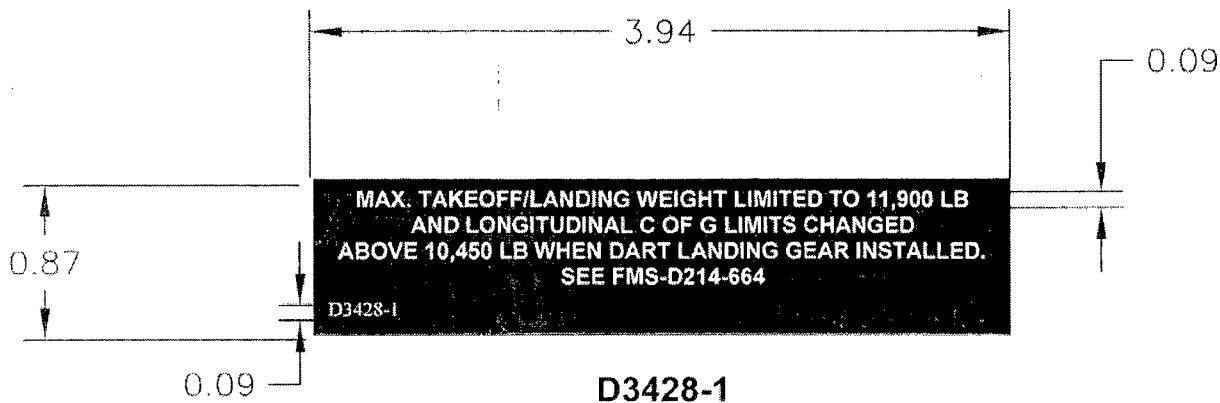
DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | |
|--|--|--|--|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION <div style="display: flex; justify-content: space-around;"> <div> <input type="checkbox"/> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update </div> <div> <input type="checkbox"/> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab </div> <div> <input type="checkbox"/> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite </div> <div> <input type="checkbox"/> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier </div> <div> <input type="checkbox"/> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other </div> </div> | |
|--|--|--|--|--|--|



| | | | |
|------------------------|-------------------------|---|------------------------|
| DESIGN PH | DRAWN BY PH | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED [Signature] | APPROVED [Signature] | DRAWING NO. D3428 | REV. A SHEET 1 OF 1 |
| DATE 05.06.07 | | TITLE PLACARD | SCALE 1:1 |
| A | 05.06.07 | NEW ISSUE | |



RELEASED
05.06.07

CX 13/04/30
W/O. 100709



- 1) MATERIAL: WHITE LETTERS ON BLACK ADHESIVE BACK
MANUFACTURED FROM 3M 7 MIL MASKING FILM #8522CP
OR AVERY IPM #2031
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) TOLERANCES PER DART QSI 018 UNLESS OTHERWISE NOTED.

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO19731**

Purchase Order Date 4/30/13

PO Print Date 4/30/13

Page Number 1 of 1

Order From :

VC-STU001

STUDIO DE LETTRAGE 2001
210 MAIN WEST
HAWKESBURY, ON K6A 2H6
CA

Contact Name

Vendor Phone 613 632 5449

Vendor Fax 613 632 9491

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
6/23/04/13

| Line Nbr | Reference Revision ID Vendor Part Number | Description/ Mfg ID | Req Date/ Taxable | Req Qty/ Unit of Measure | Ship Method | Unit Price | Extended Price |
|----------|--|------------------------|------------------------------------|-----------------------------|-------------|------------|-------------------|
| 1 | D2269P | Placard | 5/03/13 Yes | 12.00 Each | Yours ppd | \$12.5000 | \$150.00 |
| | | Special Inst: | AS PER DWG D2269 REV. B B100526 | | | | |
| 2 | D3428-1P | Placard | 5/03/13 Yes | 40.00 Each | Yours ppd | \$3.2500 | \$130.00 |
| | | Special Inst: | AS PER DWG D3428 REV. A B100704 | | | | |

PO Total:

\$280.00

CERTIFICATE OF CONFORMITY
REQ'D UPON DELIVERY

Change Nbr: 1

Change Date: 4/30/13

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required **YES** NO

**210 Main Street W
Hawkesbury, Ontario K6A 2H6**

| | |
|---------------|------------|
| Invoice No.: | 20006 |
| Date: | 05/02/2013 |
| Ship Date: | |
| Page: | 1 |
| Re: Order No. | WO9816 |

Sold to:

Dart Aerospace Ltd
1270 Aberdeen
Hawkesbury, Ontario K6A 1K7

Ship to:

Dart Aerospace Ltd
Hawkesbury, Ontario

Business No.: 82500 7651 RT0001

| Item No. | Unit | Quantity | Description | Tax | Unit Price | Amount |
|--|------|----------|----------------------------------|-----|---------------------|---------------|
| | | 12 | 3M STICKERS D2269P | H | 12.50 | 150.00 |
| | | 40 | 3M STICKERS D3428-1P PO#19731 | H | 3.25 | 130.00 |
| | | | H - HST 13% HST | | | 36.40 |
| Studio de Lettrage HST: #825007651RT0001 | | | | | | |
| Shipped By: Tracking Number: | | | | | | |
| Comment: | | | | | | |
| Sold By: | | | | | | |
| | | | | | Total Amount | 316.40 |

****Certificate of Conformity****

Customer:

Studio Heffrage

Purchase Order #:

19731

Packing Slip #:

WO 9814

Part #:

See below

Serial #:

Description:

D2269P
Stickers D3428-P

Quantity:

52 Total.

Certification:

We hereby certify that:

1. The above the listed items were manufactured, repaired and/or inspected in accordance with applicable drawings and/or specifications;
2. All work was accomplished in accordance with the Dart Aerospace Purchase Order;
3. Results of all inspections, chemical or physical tests, as well as other evidence, which shows the acceptability of raw materials, parts and/or assembly components are on file and available for inspection at any time.

Authority:

34M

APPROVAL:

KAREN STE. MARIE

DATE:

Signature:

Karen Ste. Marie

Title:

Project Coordinator

May 2, 2013.



Product & Instruction Bulletin 8522

Release 1, Effective September 2008
See Bulletin Change Summary and end of Bulletin
This Bulletin now includes Instruction Bulletin 4.23

Scotchcal™ Changeable Opaque Imaging Media 8522

Product Description

Recommended Types of Graphics and End Uses

For Thermal Inkjet Printing

This durable, 7 mil, opaque, changeable film is optimized for use with selected thermal inkjet printers and inks. Ink dries quickly on the film. When overlaminated, it is warranted for medium term, outdoor weatherable graphics, and long term indoor graphics.

When constructed and used as described in this Bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty. Please read the entire Bulletin for details.

- First surface images (the image is on top of the film) for opaque posters and signs, including:
 - Graphics for vans, personal vehicles, trucks and buses
 - Novelty posters
 - Retail and point-of-purchase displays
 - Information graphics such as maps and directories
 - Entertainment promotions in museums, zoos, parks, theatres, sports venues
 - Education and presentation graphics
 - Legal and courtroom exhibits
- For flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications

Limitations of End Uses

3M specifically does not recommend or warrant the following uses, but please contact us to discuss your needs or recommend other products.

Unsuitable End Uses for This Product

- Not for electronically cut individual letters and numbers
- Fleet applications in areas that use salt for winter road maintenance
- Application to non-warranted substrates, including wallboard
- Applications subjected to gasoline vapors or spills
- Application to corrugated or highly irregular surfaces or sharply raised areas
- Graphics applied to stainless steel, including stainless steel vehicles
- On flat surfaces with rivets, tenting of 4 to 10 mm around rivets may be expected; rivets may be cut around to eliminate tenting.
- Graphics made for automotive Original Equipment Manufacturers (OEM); contact 3M Automotive Division at 1-800-328-1684 for alternatives.

About Water-Based Inkjet Technology

Standard inkjet technology is water based. Water-based chemistry is susceptible to the extremes of heat and humidity. This is a factor in most product constructions on the market. Read the Fabrication, Shelf Life and Storage sections in this Bulletin. Staying in the middle of these ranges always provides optimum performance.

Compatible Products

3M Graphic Materials

For complete details about graphic construction options, recommended uses and durability, refer to the Product Bulletin for the base film or substrate (media) you are using. See **3M Related Literature** at the end of this Bulletin.

This Bulletin provides details about the base film and construction options and warranty. Additional specific information about compatible products can be found in the Product and Instruction Bulletins listed in **3M Related Literature** at the end of this bulletin.

3M Graphic Materials

For complete details about graphic construction options, recommended uses and durability, refer to the Product Bulletin for the base film or substrate (media) you are using. See **3M Related Literature** at the end of this Bulletin.

Film

- 3M™ Scotchcal™ Opaque Imaging Media 8522

Overlamine

- 3M™ Scotchcal™ Luster Overlamine 8519
- 3M™ Scotchcal™ Matte Overlamine 8520

Printers and Inks

HP Designjet Printers

- 2500CP and 2000CP
2800CP and 3800CP
3500CP and 3000CP
- HP Designjet 5000 and 5500
- Z6100

HP Inks

- Designjet CP Ink System UV (pigment-based)
- Designjet CP Inkjet System (imaging ink)
- HP 91 Viverra Ink System

Epson Printers

- Stylus Pro 9500
- Stylus Pro 10000 printer
- Stylus Pro 10600 printer

Epson Inks

- Archival Inks

Characteristics

These are typical values for unprocessed product; processing may change the values. Contact your 3M representative for a custom specification.

| Characteristic | Description |
|----------------------------------|--|
| Media | 7 mil, white, opaque graphic film |
| Liner | Low-slippage, lay flat paper |
| Adhesive | Changeable, pressure sensitive |
| Thickness | Media with adhesive: 7.5 to 8 mil (nominal) |
| Warranted application substrates | See next page. |
| Application surfaces | Flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications (no corrugations) |
| Application temperature range | 28° to 110°F (-2° to 43°C) (air and surface) |
| Removable | For up to one year; see Warranty Information |

| Characteristic | Description |
|----------------------------------|--|
| Warranted application substrates | <p>Some substrates may "out-gas", resulting in tiny bubbles throughout the surface of the graphic. For maximum performance, be sure the substrate you select is properly cleaned and prepared as recommended by the manufacturer. See Instruction Bulletin 5.1 for additional information.</p> <ul style="list-style-type: none"> • Alodine (anodized aluminum) • Automotive panels (automotive painted steel) • Fruehauf (painted aluminum) • FRP (fiberglass reinforced plywood) • Glass • Imron® (polyurethane-painted metal panel) • Acrylic • Sintra™ board <p>Note: Use on any other substrate is strictly on a graphics manufacturer and customer test and approve basis. Test for both adhesion and removal characteristics. The plasticizer in some banner materials may migrate. This may cause the edge of the graphic to peel or lift off of the banner. For optimum performance, follow the guidelines in the section, Creating A Laminated Overlap, on page 4.</p> |

Warranty Information

The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor. **The warranties in the following table(s), given in years, are for finished graphics exposed in a vertical exposure in the United States except the Desert Southwest.** See the warranty sections following this table for additional information.

3M™ MCS™ Warranty Durability for Finished Graphics

| Construction (film and overlaminate on warranted substrate) | HP Printers & Inks | | Epson Printers & Inks | | Removal |
|---|--------------------|---------|-----------------------|---------|--|
| | Outdoor | Indoor | Outdoor | Indoor | |
| 8522/8519 | 3 years | 5 years | 2 years | 5 years | 1 year without chemical strippers or tools |
| 8522/8520 | | | | | |

Warranty and Limited Remedy

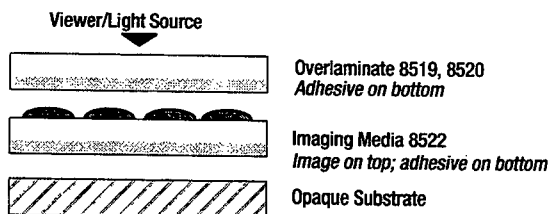
The following is made in lieu of all other express or implied warranties, including any implied warranty of **merchantability** or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade: all 3M products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin. 3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. These remedies are exclusive. **In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor or non-3M materials charges.**

See the Graphics Market Center Warranty Brochure, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

Graphic Construction Options

Opaque Graphics

Opaque graphics made with imaging media 8522 require an overlaminate and an opaque substrate.



Fabrication

Shop Temperature

Different combinations of shop temperature and humidity can affect the handling of the media, the protective finish and the printed graphic. For optimum performance, use the *middle* of each of these ranges whenever possible.

Acceptable: 60° to 95°F (15° to 35°C)
Optimum: 65° to 73°F (18° to 23°C)

Shop Humidity

Acceptable: 20% to 80%
Optimum: 45% to 60%

Condition the Media Before Use

These steps are especially important if you are operating outside the conditions recommended under Fabrication, above.

- Leave the media in its original packaging until you are ready to condition and use it.
- The day before you need it, remove the media from the box and remove the plastic.
- Condition the media for 24 hours in the same environment as the printer.

Printer Settings for Optimum Quality

Refer to your Hewlett Packard printer manual for detailed operating instructions.

The quality of a printed image depends on a combination of factors: correct media selection, printing software and raster imaging processor (RIP), shop conditions, etc.

The printers qualified to use this media have print mode options that are programmed specifically for these media. Current charts that show the various modes and printing dpi, and the quality results you can expect are available at www.hp.com under the website's support section. We recommend that you print the same image at all of these settings to determine acceptable print and productivity results.

The highest quality settings are usually desirable for backlit applications.

The correct media selection makes most other necessary adjustments to the printer.

- For the HP DesignJet CP 2000 or 3000 series printers, select the **Opaque Vinyl UV** setting.
- For the HP Designjet 5000 series printers, select the **3M Changeable UV** setting or the **HP Durable Gloss UV** or **HP Colorfast Vinyl** setting.
- For the Z series printers, refer to HP's website or printer manuals.

Note: The HP printer settings lay down less ink per pass, which results in better ink absorption and quicker drying times.

- For the HP DesignJet CP 2000 or 3000 series printers, select the **Opaque Vinyl UV** setting.
- For the HP Designjet 5000 series printers, select the **3M Changeable UV** setting or the **HP Durable Gloss UV** or **HP Colorfast Vinyl** setting.
- For the Z series printers, refer to HP's website or printer manuals.

Note: The HP printer settings lay down less ink per pass, which results in better ink absorption and quicker drying times.

Drying Guidelines

Usually, the media can be laminated within 10 minutes after printing. However, especially in high humidity conditions, we recommend waiting 15 to 30 minutes before laminating.

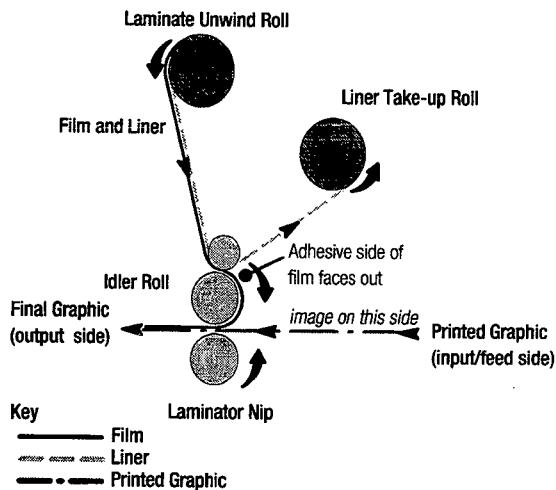
Use care when handling graphics that have not been laminated to avoid scratching and abrasion.

Graphics made with this media and ink combination typically may be wound directly on a take-up roll after printing.

Overlamine

Whether or not you want a warranted graphic, an overlamine is recommended to enhance durability, especially in outdoor applications.

FIGURE 1
Typical Laminator Thread-up



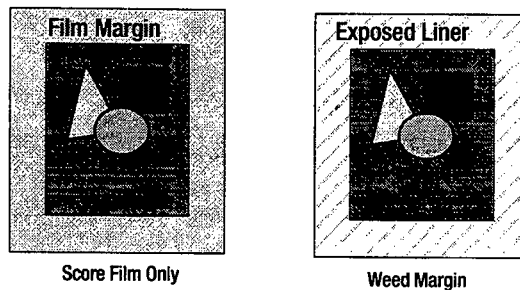
Creating a Laminated Overlap

Creating a laminated overlap helps ensure that the graphic does not peel or lift away from certain banner materials that may be subject to plasticizer migration. This method may also be used for flat, rigid or flexible sign applications.

1. Print the graphic as usual.
2. On all sides of the graphic, score *the film only* to the correct, final graphic dimension *without cutting through the liner*.

Weed away the excess film, leaving the bare liner exposed around the graphic. See FIGURE 2.

FIGURE 2
Trim and Weed Film Margin Only



3. Laminate the graphic as usual (see page 5), making sure that at least one inch of the bare liner is covered by the laminate. See FIGURE 3.